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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/014,365	12/11/2001	Gabel Chong	30320/37784	1141

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EXAMINER

WOOD, KEVIN S

ART UNIT PAPER NUMBER

2874

DATE MAILED: 05/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/014,365

Applicant(s)

CHONG ET AL.

Examiner

Kevin S Wood

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-17 and 24-30 is/are allowed.
- 6) ☒ Claim(s) 18-23 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

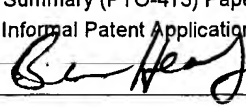
Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 December 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2. 6) ☐ Other: 

DETAILED ACTION

Drawings

1. The informal drawings are accepted for examination purposes only, new formal drawings will be required when the application is allowed.
2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 12'. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.
3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: 16', 17' and 23'. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 18-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,515,464 to Sheem.

Referring to claim 18, Sheem discloses a three dimensional waveguide that includes a substrate/lower cladding layer (31) comprising a three dimensional trench having a peripheral boundary including a first end and a second end, the first end of the trench being wider and deeper than the second end of the trench, the trench being partially filled with core material so that a height of the core material at the first end of the trench is greater than a height of the core material at the first end of the trench is greater than a height of the core material at the second end of the trench, the core material and the first cladding layer being covered by a cladding layer. See Fig. 14 through Fig. 25. Sheem et al. discloses a substrate that also acts as the lower cladding layer. Sheem et al. does not appear to specifically disclose a lower cladding and substrate that are separate and distinct components. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a

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substrate and a separate lower cladding, since it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art.

Nerwin v. Erlichman, 168 USPQ 177, 179.

Referring to claim 19, Sheem discloses an optical fiber (26) that is aligned with the end of the trench. However, Sheem discloses that the fiber is coupled to the smaller end of the trench. The purpose of the invention of Sheem is to provide a interconnecting structure between a waveguide and an optical fiber. Therefore, if the fiber were larger than the waveguide, it would have been obvious to couple the fiber to the larger end of the interconnecting (tapered) structure while coupling the waveguide to the smaller end. Fig. 14 through Fig. 25.

Referring to claims 20 and 21, Sheem does not appear to disclose that the optical fiber has a diameter ranging from about 8 μm to about 9 μm and a width of the first end of the trench ranges from about 8 μm to about 9 μm . It would have been an obvious matter of design choice to modify the dimensions of the trench in order to couple the waveguide to a having any reasonable diameter, since such a modification would have involved a mere change in size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art. *In re Rose*, 105 USPQ 237 (CCPA 1955).

Referring to claim 22, Sheem does not appear to disclose that the core comprises a first polymer and the second cladding layer comprises a second polymer. However, the use of polymers for forming optical cores and claddings is well known in the art. Therefore, it would have been obvious to one having ordinary skill in the art at

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the time the invention was made to utilize polymers for forming the core and cladding, since It has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Referring to claim 23, Sheem does not appear to disclose that the core comprises a first doped silica and the second cladding layer comprises a second doped silica. However, the use of doped silica for forming optical cores and claddings is well known in the art. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize doped silica for forming the core and cladding, since It has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Allowable Subject Matter

7. Claims 1-17 and 24-30 are allowed.
8. The following is a statement of reasons for the indication of allowable subject matter:

Referring to claims 1-17, the prior art does not disclose all the limitations of the method of fabricating an optical waveguide. The prior art does not disclose the step of forming a second trench in the core material with first and second ends in general alignment with the first and second ends of the first trench and with the second end of the second being deeper than the first end of the second trench.

Referring to claims 24-30, the prior art does not disclose all the limitations of the claimed method of fabricating an optical waveguide. Specifically, the prior art does not disclose the step of reactive ion etching the uncoated area under conditions sufficient to permit RIE lag to occur so as to form a first trench having the first end of the trench being deeper than the second end of the first trench. The prior art also does not disclose the step of reactive ion etching the core material under conditions sufficient to permit reverse RIE lag to occur so as to form a second where the second end of the second trench is deeper than the first end of the second trench.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin S Wood whose telephone number is (703) 605-5296. The examiner can normally be reached on Monday-Thursday (7am - 5:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney B Bovernick can be reached on (703) 308-4819. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 307-0956.

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KSW

May 14, 2003

A handwritten signature in black ink, appearing to read "Brian Hooley". The signature is fluid and cursive, with the first name "Brian" written in a more compact, stylized manner and the last name "Hooley" written more fully.

Brian Hooley
Primary Examiner